

REMARKS

The Office Action mailed January 9, 2004 has been carefully considered by Applicant. Applicant respectfully requests reconsideration of the present application in view of the foregoing claim amendments and in view of the reasons that follow.

Claims 1-44 are cancelled.

Claim 45 is amended.

Claims 48-53 are added.

Claim Rejections Under 35 U.S.C. §102(b)

In the Office Action, claims 3, 4, 9, 13-19, 27 and 28 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Webber et al. U.S. Patent No. 5,367,698. By the present Amendment claims 3, 4, 9, 13-19, 27 and 28 are cancelled without prejudice, thus rendering the rejections moot.

Claims 45-47 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Nishihara U.S. Patent No. 5,359,512. By the present Amendment, independent claim 45 has been amended to more clearly define the subject matter of the present invention and render the same allowable over the applied reference.

Claim 45, as amended, recites a method for managing a memory in a workstation when a size of a user selected files exceeds the memory capacity in the workstation. The method comprises the steps of (1) displaying a plurality of open medical images, (2) unloading an unloaded message selected from at least one of the plurality of open medical images from the memory of the workstation, and (3) saving display settings of the unloaded image such that if the unloaded image is not closed and a user decides to redisplay the unloaded image, the unloaded image appears to have remained virtually open to the user and as if the unloaded image had not been unloaded.

Nishihara '512 discloses a picture archiving communication system (PACS) for medical application that includes a workstation (400) and a database (300) that includes a low speed recording medium (356) and a high speed recording medium (354) for storing image data collected by a diagnosing apparatus unit (100). When a user selects a desired image data from the workstation, a transfer command is sent to the database. The image data from the

database is read-out to the workstation. A migration processing unit copies the image data stored in the low speed recording medium to the high speed recording medium in the database. As stated in column 2, lines 43-53, the capacity of the magnetic disc drive is limited. Therefore, it is necessary to delete unnecessary files on an as needed basis. "The image data can be deleted from the earliest accessed image file, by referring to the access record (e.g. flag) indicating whether the image data was accessed as a header information of the data in the high speed recording medium. Thus, non-accessed data is not deleted from the high speed recording medium". Column 3, lines 43-47.

Claim 45 is not anticipated by Nishihara '512 for at least the following reasons. Nishihara '512 fails to teach or suggest the step of saving display settings of the unloaded image such that if the unloaded image is not closed and a user decides to redisplay the unloaded image, the unloaded image appears to have remained virtually open to the user and as if the unloaded image had not been unloaded. In contrast, Nishihara '512 teaches that to alleviate problems related to limited memory space on a magnetic disc drive, it is possible to provide a "file management means" that allows the system to automatically delete the "earliest accessed image file". Nishihara '512 fails to teach or suggest any sort of system comparable to that which is claimed in claim 45. The passage cited by the Examiner in the Office Action simply describes a basic PACS for uploading image files to a workstation, managing the image files on a magnetic disc drive, and deleting unnecessary files that have the "earliest date of access". This disclosure fails to teach or suggest the subject matter of claim 45. As such, claim 45 is believed allowable. Such action is earnestly requested.

Claims 46 and 47 depend directly from claim 45 and are thus believed allowable for the reasons stated above, as well as the detailed subject matter recited therein.

CLAIM REJECTIONS UNDER 35 U.S.C. § 103

Claims 10, 11, 20-23, 34-35, and 37-44 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Webber et al. '698. By the present Amendment, claims 10, 11, 20-23, 34, 35 and 37-44 are cancelled without prejudice, thus rendering the rejections moot.

Claim 24 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Webber et al. '698 in view of Kimura U.S. Patent No. 6,501,905. By the present

Amendment, claim 24 is cancelled without prejudice, thus rendering the foregoing rejection moot.

NEW CLAIMS 48-51

Claims 48-51 have been added to more clearly define the subject matter of the present invention.

Claim 48, as amended, recites a method for managing a memory in a workstation when a size of user selected medical image files exceeds the memory capacity in the workstation. The method comprises the steps of opening a plurality of medical image files to display a plurality of medical images, prioritizing the plurality of medical image files using a prioritization scheme, and unloading from the memory of the workstation a medical image file having a lower priority than at least one of the open medical image files stored in memory. The prioritization scheme includes (1) a first level comprising a currently viewed medical image, (2) a second level comprising medical images in a viewing stack, and (3) a third level comprising medical images related to medical images with a higher priority. The medical images from the first level are designated with a higher priority than the medical images of the second level and the medical images of the second level are designated with a higher priority than the medical images of the third level. Ultimately, the unloaded medical image file includes at least a portion of at least one of the open medical images.

The primary reference cited by the Examiner in the Office Action regarding the now cancelled claims 1-44 is Webber et al. '698, which teaches a system for managing file storage in a network having a series of workstations. Webber et al '698 recognizes that most workstations experience a variety of storage management problems including the lack of sufficient free space to accommodate user's working sets of active files. Webber et al '698 states that the local disk does not have enough room for the active files, then files must be in effect swapped to and from archival storage to make more room. Typically, user's disks are occupied by "inactive files" -- those not part of the working set -- so that insufficient space is available for the local set. Inactive files include those that have not been referenced in over 30 days. Column 2, lines 4-13. According to Webber et al a critical requirement is that a system's scarce, expensive, high performance local storage be available for the data most

suited to it -- i.e., the active data. Only demonstrably inactive files should be moved to archival storage. Column 2, lines 58-62. The invention disclosed by Webber et al '698 is best defined in column 3, lines 38-50:

The client filesystems establishes at least one file directory containing an entry for each file stored in an associated client device. After transfer of the data portion of given file, the file transfer element maintains the directory entry for that file in the directory, so that files transferred to the migration storage means continue to be logically present in the director associated with the client device from which they were transferred, and so that an application program operating in a client device will operate upon the transferred file as if the file were still present in a local storage element, with all client operating system commands operating upon the transferred file as if the file were still present.

The invention in Webber et al '698 exploits the fact that most user's working sets of active files remain relatively stable in size over time. In order to reliably ensure that sufficient storage element capacity exists to store the networks' active files, the invention provides methods and apparatus for identifying inactive files and automatically moving them to economical archival storage. Webber et al refer to several commonly owned, co-pending U.S. patent applications (5,276,867, 5,276,860 and 5,218,695) as disclosing these "known" techniques. In addition, Webber et al discloses the basic technique of selecting the best least-recently-used candidates from the file system for removal. Column 10, line 2; column 11, lines 61-63; column 17, lines 23-26. The migration server determines for the administrator which files on the servers are inactive, automatically moves these files to a storage element in the migration server, and automatically maintains the most active files on the file servers' local storage. Column 15, lines 15-20.

As acknowledged by the Examiner in the Office Action, Webber et al fails to teach or suggest a prioritization scheme having three levels, specifically (1) a first level comprising a currently viewed medical image, (2) a second level comprising medical images in a viewing stack, and (3) a third level comprising medical images related to medial images with a higher priority, wherein the medical images from the first level are designated with a higher priority than the medical images of the second level and the medical images of the second level are

designated with a higher priority than the medical images of the third level. This prioritization scheme is neither taught nor suggested by Webber et al and, as such, represents a significant improvement upon the teachings thereof.

The Examiner states that the aforementioned prioritization scheme would have been obvious to one of skill in the art in light of Webber et al disclosing "creating, deleting, configuring and move client stores". However, the simple migration and unitary treatment of "client stores" as defined by Webber et al does not teach or suggest the three level prioritization scheme set forth in claim 48. If the files part of a particular "client store" in Webber et al '698 are "moved" together, then the various files within the store are as active as each other and thus, obtain the same status in the prioritization scheme. Because Webber et al '698 merely teaches removing the "least active" file, there is no teaching as to how to delineate between the particular files in each client store. Thus, Webber et al fails to teach or suggest the unique prioritization scheme set forth in claim 48. The Examiner's conclusory statement that the ordinary skilled artist would have been motivated to modify Webber to include the unique prioritization scheme defined by claim 48 is therefore strongly traversed. Applicant requests that the Examiner provide further support for his opinion of what is and what is not an obvious modification to the Webber et al '698 reference, MPEP §2144.

Claims 49-51 depend directly from claim 48 and are thus believed allowable for the reasons stated above as well as the detailed subject matter recited therein.

Regarding claim 50, Webber et al '698 fails to teach or suggest the step of saving the visual display settings of the unloaded medical image file such that if the unloaded medical image file is not closed and a user decides to redisplay the unloaded image file, the unloaded medical image file appears virtually open to the user and as if the unloaded medical image file had not been unloaded. Per the Examiner's statements, Webber et al '698 teaches a file storage management system that maintains the "directory entry" for each unloaded file in a file directory, so that files transferred to the migration storage means continue to be "logically present in the directory" associated with the client device from which they were transferred. In this manner, an application program operating in a client device will operate upon the transferred file as if the file were present in a local storage element, with all client

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operating system commands operating upon the transferred file as if the file were still present. Column 3, lines 40-50. However, Webber et al '698 fail to teach or suggest the step of saving the visual display settings of the unloaded medical image file such that the image file appears virtually open to the user and as if the unloaded medical image file had not been unloaded. Webber et al '698 teaches only that the directory information remains on the magnetic disk such that it can be referenced at all times. This does not anticipate or render obvious the concept claimed in dependent claim 50. Any argument that this concept is "inherent" in Webber et al '698 is respectfully traversed. The Examiner's statement that this concept is "inherent" is conclusory and applicant respectfully requests that the Examiner provide substantive support for his opinion, MPEP §2144.

New Claims 52-53

Claims 52 and 53 have been added to more clearly define the subject matter of the present invention. Claim 52 recites a system for managing memory in a workstation that includes a prioritization scheme having the three levels delineated in claim 48. As such, for the reasons stated above, claim 52 is believed allowable at least for the reasoning stated above.

The present application is thus believed in condition for allowance with claims 45-53. Such action is earnestly requested.

Respectfully submitted,

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